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09/667,091	09/21/2000	Ping Liang	XDM 00-02	6380

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EXAMINER	
VU, TRISHA U	

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/667,091	LIANG, PING	
	Examiner	Art Unit	
	Trisha U. Vu	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2004* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6 and 8-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6 and 8-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 May 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1, 3-6, and 8-34 are presented for examination.

Claims 2 and 7 were canceled by Applicant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 18, 25-26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Garreau (6,769,035).

As to claim 18, Garreau teaches a mobile computing device (10) that can operate both as a host or a device (Fig. 3) comprising: a housing for receiving an expansion card (expansion board); a processor (processor 14) that can function as a USB controller configured to operate as a USB host or a USB device within the housing (col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5); and a USB connector (expansion board

connector 18) coupled to the USB controller; the USB connector positioned within the housing for operationally coupling the expansion card the mobile computing device via a USB interface (Fig. 3).

As to claim 25, Garreau further teaches the USB controller is a USB host (col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5).

As to claim 26, Garreau further teaches the USB controller is a USB device (col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5).

As to claim 27, Garreau teaches a mobile personal digital assistant that can operate both as a USB host or a USB device comprising: a housing having means for receiving an expansion card; a processor that can function as a USB controller configured to operate as a USB host or USB device within the housing; a USB connector for the USB controller; the USB connector being positioned within the housing to operationally couple the expansion card to the mobile personal digital assistant via a USB interface and another USB connector.

As to claim 28, Garreau teaches an expansion module (10) for a mobile device that can operate both as a USB host or a USB device (Fig. 3) comprising: a USB interface (I/O controller 16 and associate circuitry) coupled to a processor (processor 14) that can function as a USB controller configured to operate as a USB host or a USB device (col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5); and an expansion card (expansion board) coupled to the USB interface for providing expansion module function; and a USB connector (expansion board connector 18) for the USB interface (Fig. 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garreau (6,769,035) as applied to claims 18 and 28 above, and further in view of Huang (6,280,252).

As to claims 19 and 29, Garreau does not explicitly teach the USB connector has a non-standard USB form factor. Huang teaches connectors have a form factor smaller than a standard USB form factor (mini USB connector) (col. 1, lines 5-10, 36-67, and col. 2, lines 1-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement USB connectors having a smaller form factor as taught by Huang in the system of Garreau to provide a more compact system as today's digital equipment is getting smaller in size.

4. Claims 20-24 and 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garreau (6,769,035) as applied to claims 18 and 28 above, and further in view of Kikinis (5,841,424).

As to claim 20, Garreau does not explicitly teach a conversion circuit within the housing and coupled between the USB controller and the USB connector. Kikinis

teaches a conversion circuit (USB adapter Fig. 6) coupled between peripheral USB devices (col. 5, lines 52-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a conversion circuit as taught by Kikinis in the system of Garreau to provide power conversion required by the specific connected serial peripheral device (coll. 2, lines 13-18).

As to claims 21, 22, Kikinis further teaches the conversion circuit reduces/boosts the voltage of a signal on the USB connector to a corresponding controller voltage and provides the reduced/boosted voltage to the controller if the voltage on the USB connector is higher/less than the corresponding controller voltage (note col. 6, lines 1-8 wherein the charging adapter converts the one voltage to the other).

As to claims 23, 24, Kikinis further teaches the conversion circuit reduces/boosts the voltage of a controller signal to a voltage expected at the USB connector and provides the reduced/boosted voltage to the USB connector if the controller voltage is higher/less than the corresponding voltage expected at the USB connector (note col. 6, lines 1-8 wherein the charging adapter converts the one voltage to the other).

As to claim 30, Garreau does not explicitly disclose a conversion circuit coupled between the USB interface and the USB connector. Kikinis teaches a conversion circuit (USB adapter Fig. 6) coupled between peripheral USB devices (col. 5, lines 52-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a conversion circuit as taught by Kikinis in the system of Garreau to provide power conversion required by the specific connected serial peripheral device (coll. 2, lines 13-18).

As to claims 31, 32, Kikinis further discloses the conversion circuit reduces/boosts the voltage of a signal on the first USB connector to a corresponding interface voltage and provides the reduced/boosted voltage to the interface if the voltage on the first USB connector is higher/less than the corresponding interface voltage (note col. 6, lines 1-8 wherein the charging adapter converts the one voltage to the other).

As to claims 33, 34, Kikinis further discloses the conversion circuit reduces/boosts the voltage of an interface signal to a voltage expected at the first connector and provides the reduced/boosted voltage to the first connector if the interface voltage is greater/less than expected (note col. 6, lines 1-8 wherein the charging adapter converts the one voltage to the other).

5. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garreau (6,769,035) in view of Kikinis (5,841,424).

As to claim 27, Garreau teaches a computer system (10) that can operate both as a USB host or a USB device (Fig. 3) comprising: a housing having means for receiving an expansion card (expansion board); a processor (14) that can function as a USB controller configured to operate as a USB host or USB device within the housing (col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5); a USB connector (expansion board connector 18) for the USB controller; the USB connector being positioned within the housing to operationally couple the expansion card to the computer system (Fig. 3). However, Garreau does not explicitly disclose the computer system being a personal digital assistant. Kikinis teaches personal digital assistant (PDA) (col. 1, lines 13-25). It

would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the computer system of Garreau to be a PDA to provide a more mobile and compact computer system.

6. Claims 1, 3-6, and 8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garreau (6,769,035) in view of Kikinis (5,841,424) and further in view of Huang (6,280,252).

As to claims 1 and 3, Garreau teaches a mobile computing device (10) that can operate both as a host or a device (Fig. 3) comprising: a processor (14) that can function as a USB controller configured to operate as a USB host or a USB device (col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5); a housing having a means for receiving an expansion card (expansion board); wherein the expansion card is operationally coupled to the mobile computing device via a first USB connector (in expansion board); and a second USB connector (expansion board connector) positioned in the housing to mate with the first USB connector, and the expansion card interfaces with a USB interface (Fig. 3). However, Garreau does not explicitly teach a conversion circuit coupled between the USB interface and the first USB connector. Kikinis teaches a conversion circuit (USB adapter Fig. 6) coupled between peripheral USB devices (col. 5, lines 52-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a conversion circuit as taught by Kikinis in the system of Garreau to provide power conversion required by the specific connected serial peripheral device (col. 2, lines 13-18). However, Garreau and Kikinis do not explicitly teach the first and second connectors have a form factor smaller than a standard USB form factor.

Huang teaches connectors have a form factor smaller than a standard USB form factor (mini USB connector) (col. 1, lines 5-10, 36-67, and col. 2, lines 1-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement USB connectors having a smaller form factor as taught by Huang in the system of Garreau to provide a more compact system.

As to claim 4, Garreau further teaches a USB controller (14) inside the housing of the mobile device (Fig. 3, and col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5).

As to claim 5, Garreau further teaches the USB controller is configured to function as a USB host (col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5).

As to claim 6, Garreau further teaches the USB controller is configured to function as a USB device (col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5).

As to claims 8, 9, Kikinis further discloses the conversion circuit reduces/boosts the voltage of a signal on the first USB connector to a corresponding interface voltage and provides the reduced/boosted voltage to the interface if the voltage on the first USB connector is higher/less than the corresponding interface voltage (note col. 6, lines 1-8 wherein the charging adapter converts the one voltage to the other).

As to claims 10, 11, Kikinis further discloses the conversion circuit reduces/boosts the voltage of an interface signal to a voltage expected at the first connector and provides the reduced/boosted voltage to the first connector if the interface voltage is greater/less than expected (note col. 6, lines 1-8 wherein the charging adapter converts the one voltage to the other).

As to claim 12, Garreau further teaches a USB controller (14) in the device (Fig. 3, and col. 3 line 55 to col. 4 line 5, and col. 4 line 62 to col. 5 line 5). However, Garreau does not explicitly disclose a conversion circuit coupled between the USB controller and the second USB connector. Kikinis teaches a conversion circuit (USB adapter Fig. 6) coupled between peripheral USB devices (col. 5, lines 52-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a conversion circuit as taught by Kikinis in the system of Garreau and Huang to provide power conversion required by the specific connected serial peripheral device (coll. 2, lines 13-18).

As to claims 13, 14, Kikinis further teaches the conversion circuit reduces/boosts the voltage of a signal on the second USB connector to a corresponding controller voltage and provides the reduced/boosted voltage to the controller if the voltage on the second USB connector is higher/less than the corresponding controller voltage (note col. 6, lines 1-8 wherein the charging adapter converts the one voltage to the other).

As to claims 15, 16, Kikinis further teaches the conversion circuit reduces/boosts the voltage of a controller signal to a voltage expected at the second connector and provides the reduced/boosted voltage to the second connector if the controller voltage is higher/less than the corresponding voltage expected at the second connector (note col. 6, lines 1-8 wherein the charging adapter converts the one voltage to the other).

As to claim 17, Garreau does not explicitly teach an adapter having a third connector that is connected to a fourth connector, the third connector being a USB connector having a standard USB form factor, the fourth connector configured to mate

with one of the first and second connectors. Kikinis discloses an adapter having a connector being a USB connector having a standard USB form factor, and another connector configured to mate with one of the connectors of other devices or PDA (note Fig. 6, col. 4. lines 49-67, and col. 5, lines 52-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an adapter as taught by Kikinis in the system of Garreau and Huang to expand the connection with other device(s) and allow successful interface to a specific peripheral device (col. 4, lines 14-28).

Response to Arguments

7. Applicant's arguments, see pages 8-9 of the Remarks, filed 05-12-04, regarding the newly added limitation "expansion card" have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference(s).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trisha U. Vu whose telephone number is 703-305-5959. The examiner can normally be reached on Mon-Thur and alternate Fri from 7:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trisha Vu

Trisha U. Vu
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